## Remarks

Reconsideration and withdrawal of the rejections set forth in Paper No. 6 are respectfully requested in view of the foregoing amendments and the following remarks.

In the last Office Action, Claims 4-6 and 11-12 were objected to as being dependent upon a rejected claim, but were deemed allowable if rewritten in independent form. Claim 1 has been rewritten to include the limitations of Claim 4, and Claim 9 has been rewritten to include a limitations of Claim 11 (which subordinate claims have accordingly been cancelled). As a result, Claims 1-3, 5-10, and 12 present subject matter that has been acknowledged to be allowable.

Consistent with the foregoing changes, Claim 13 has been rewritten to include the limitations of Claim 11, to the extent it was appropriate to do so in the content of the subject matter defined. Accordingly, it is believed that Claim 13 also sets forth allowable subject matter.

It is noted however that Claims 13-21 stand rejected under 35 U.S.C. 112, second paragraph, on grounds Claim 13 recites both an apparatus and method steps of using the apparatus, causing the examiner to assert that it is unclear what apparatus or method applicants are intending to encompass. It is respectfully submitted that this position is unfounded.

Clearly, Claim 13 is directed to apparatus. It recites a sensor that includes a radiation detector, polarization selective means, wavelengths selective means, and electronic data processing means. The recited method steps characterize the functions performed by the sensor, using the defining phraseology "configured for carrying out the ... steps."

Applicants submit that this is an entirely proper and conventional way to define apparatus. It should be appreciated that the sensor could alternatively be characterized as "sensor means for," followed by recited steps (a) through (e), in the existing claim format. Needless to say, a "means for" claim defines apparatus in terms of its functional features (which may be expressed in the form of method steps).

*Petition for Revival*

Enclosed herewith is Applicants' Petition For Revival, together with a check in payment of the requisite fee.

Having been aware that the application was unintentionally abandoned, Applicants' undersigned attorney telephone Examiner Bui on August 31, 2001 and left a message for him to call to discuss revival. Examiner Bui in turn left a message for Applicants' attorney on September 4, 2001, to the effect that any petition for revival should await receipt of a formal notice of abandonment.

Following a telephone interview on September 5, 2001, during which it was confirmed that the application stands abandoned, an official notice thereof was mailed on September 13, 2001. As shown by the appended copy of the cover sheet, however the paper, was not received in the office of the undersigned until **October 31, 2001**. Undoubtedly, the delay was occasioned by the closing of the Brentwood Post Office or by other anthrax-related factors.

In view of the foregoing, revival of the captioned application, and passage thereof to issuance with all pending claims, are believe to be clearly in order. Such actions are earnestly solicited.

Respectfully submitted,
PETER A. ROSENTHAL ET AL.

By _____
Ira S. Dorman
Attorney for Applicants
Reg. No. 24,469
Tel.: (860) 528-0772



CERTIFICATE OF EXPRESS MAILING

I, IRA S. DORMAN, hereby certify that this correspondence is being sent by Express Mail, Label No. EV 001888962 US in an envelope addressed as set forth on the first page hereof, on December 7, 2001.

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## MARKED-UP VERSION OF THE CLAIMS

1. (Amended) A method for determining the temperature T at at least one location on the surface of a sample, comprising the steps:

(a) measuring, at an oblique take-off angle and at at least one wavelength $\nu$, radiance at at least two linearly independent polarizations p1 and p2;

(b) computing a polarized radiance ratio $R_{p1}(\nu)/R_{p2}(\nu)$ of said measured radiances $R_{p1}(\nu)$, $R_{p2}(\nu)$ to determine the associated polarized emissivity ratio $\epsilon_{p1}(\nu)/\epsilon_{p2}(\nu)$, in accordance with the relationship $R_{p1}(\nu)/R_{p2}(\nu) = \epsilon_{p1}(\nu)/\epsilon_{p2}(\nu)$;

(c) applying at least one additional constraint to compute the value of at least one of the emissivities, $\epsilon_{p1}(\nu)$, $\epsilon_{p2}(\nu)$, constituting said polarized emissivity ratio; [and]

(d) determining the temperature T at said one location by solving the equation:

$$R_{p1}(\nu,T) = \epsilon_{p1}(\nu T) \times P(\nu,T),$$

wherein $P(\nu,T)$ is the Planck function;

(e) irradiating said surface with radiation including said wavelength $\nu$, and measuring reflectance $\rho$ from said surface at said wavelength $\nu$ and said polarizations p1 and p2 to thereby determine the reflectance-derived ratio $1-\epsilon_{p1}(\nu)/1-\epsilon_{p2}(\nu)$; and

(f) applying said reflectance-derived ratio as said at least one additional constraint in said step (c) for computing said at least one emissivity value.

9. (Amended) A method for determining the emissivity $\epsilon$ at at least one location on the surface of a sample, comprising the steps:

(a) measuring, at an oblique take-off angle and at at least one wavelength $\nu$, radiance at at least two linearly independent polarizations p1 and p2;

(b) computing a polarized radiance ratio $R_{p1}(\nu)/R_{p2}(\nu)$ of said measured radiances $R_{p1}(\nu)$, $R_{p2}(\nu)$ to determine the associated polarized emissivity ratio $\epsilon_{p1}(\nu)/\epsilon_{p2}(\nu)$, in accordance with the relationship $R_{p1}(\nu)/R_{p2}(\nu) = \epsilon_{p1}(\nu)/\epsilon_{p2}(\nu)$; [and]

(c) applying at least one additional constraint to compute the value of at least one of the emissivities, $\epsilon_{p1}(\nu)$, $\epsilon_{p2}(\nu)$, constituting said polarized emissivity ratio;

(d) irradiating said surface with radiation including said wavelength $\nu$, and measuring reflectance $\rho$ from said surface at said wavelength $\nu$ and said polarizations p1 and p2 to thereby determine the reflectance-derived ratio $1-\epsilon_{p1}(\nu)/1-\epsilon_{p2}(\nu)$; and

(e) applying said reflectance-derived ratio as said at least one additional constraint in said step (c) for computing said at least one emissivity value.

13. (Amended) Apparatus for determining at least one emissivity value $\epsilon$ from a surface of a simple, comprising a radiance sensor including a radiation detector, polarization selective means, wavelength selective means, and electronic data processing means, said sensor being configured for carrying out the following steps:

(a) measuring, at an oblique take-off angle and at at least one wavelength $\nu$, radiance at at least two linearly independent polarizations p1 and p2;

(b) computing a polarized radiance ratio $R_{p1}(\nu)/R_{p2}(\nu)$ of said measured radiances $R_{p1}(\nu)$, $R_{p2}(\nu)$ to determine the associated polarized emissivity ratio $\epsilon_{p1}(\nu)/\epsilon_{p2}(\nu)$, in accordance with the relationship $R_{p1}(\nu)/R_{p2}(\nu) = \epsilon_{p1}(\nu)/\epsilon_{p2}(\nu)$; [and]

(c) applying at least one additional constraint to compute the value of at least one of the emissivities, $\epsilon_{p1}(\nu)$, $\epsilon_{p2}(\nu)$, constituting said polarized emissivity ratio;

(d) measuring reflectance $\rho$ from said surface at said wavelength $\nu$ and said polarizations p1 and p2 to thereby determine the reflectance-derived ratio $1-\epsilon_{p1}(\nu)/1-\epsilon_{p2}(\nu)$; and

(e) applying said reflectance-derived ratio as said at least one additional constraint in said step (c) for computing said at least one emissivity value.